

IN THE CLAIMS:

1-121. (Cancelled).

122. (Allowed) Purified cage molecules consisting of carbon atoms.

123. (Allowed) Purified cage molecules consisting of carbon atoms in solid form.

124. (Allowed) Crystalline cage molecules consisting of carbon atoms.

125. (Canceled)

126. (Allowed) A macroscopic amount of purified cage molecules consisting of carbon atoms.

127. (Currently Amended) A formed or molded product comprising purified C₆₀ and/or C₇₀.

128. (Canceled)

129. (Canceled)

130. (Allowed) A free-flowing particulate comprising cage molecules consisting of carbon atoms in microcrystalline form.

131. (Allowed) A solid comprising a macroscopic amount of cage molecules consisting of carbon atoms in crystalline form.

132. (Canceled)

133. (Allowed) Purified cage molecules consisting of carbon atoms prepared by the process comprising: (a) vaporizing a carbon source in the presence of an inert quenching gas under conditions effective to provide a sooty carbon product comprising cage molecules consisting of carbon atoms; (b) depositing the sooty carbon product on a collecting substrate; (c) removing the sooty carbon product from the collecting substrate; (d) contacting the sooty carbon product with a non-polar organic solvent effective to dissolve said cage molecules to form a solvent solution, said solvent being present in an amount effective to dissolve said cage molecules in said sooty

carbon product; and (e) recovering from said solvent solution purified cage molecules consisting of carbon atoms in a macroscopic amount.

134. (Allowed) The purified cage molecules consisting of carbon atoms of claim 133 in which the carbon in step (a) is vaporized in an evacuated reactor.

135. (Allowed) The purified cage molecules consisting of carbon atoms of claim 134 in which the carbon source of step (a) is vaporized in an evacuated bell jar.

136. (Allowed) The purified cage molecules consisting of carbon atoms of claim 133 in which the carbon source subject to vaporization in step (a) is graphite.

137. (Allowed) The purified cage molecules consisting of carbon atoms of claim 133 in which the carbon source subject to vaporization in step (a) is graphite rods.

138. (Allowed) The purified cage molecules consisting of carbon atoms of claim 133 wherein the carbon source is vaporized in step (a) through heating the carbon source by means of an electrical current of sufficient intensity to produce the sooty carbon product.

139. (Allowed) The purified cage molecules consisting of carbon atoms of claim 138 wherein the electrical current is about 100 amps.

140. (Allowed) The purified cage molecules consisting of carbon atoms of claim 133 wherein the inert quenching gas of step (a) is a noble gas.

141. (Allowed) The purified cage molecules consisting of carbon atoms of claim 133 wherein the carbon source is vaporized in step (a) at a pressure ranging from 50 torr to 400 torr.

142. (Allowed) The purified cage molecules consisting of carbon atoms of claim 141 wherein the carbon is vaporized in step (a) at approximately 100 torr.

143. (Allowed) The purified cage molecules consisting of carbon atoms of claim 133 wherein the carbon is vaporized in step (a) at a pressure ranging from about 2 to 3 atmospheres.

144. (Allowed) The purified cage molecules consisting of carbon atoms of claim 133 wherein the collecting substrate in step (b) is a glass surface.

145. (Allowed) The purified cage molecules consisting of carbon atoms of claim 140 wherein the inert gas is helium or argon.

146. (Allowed) The purified cage molecules consisting of carbon atoms of claim 133 wherein the non-polar organic solvent of step (d) is carbon disulfide, benzene, carbon tetrachloride or toluene.

147. (Allowed) The purified cage molecules consisting of carbon atoms of claim 146 wherein the solvent is benzene.

148. (Allowed) The purified cage molecules consisting of carbon atoms of claim 146 wherein the solvent is carbon tetrachloride.

149. (Allowed) The purified cage molecules consisting of carbon atoms of claim 133 wherein recovery step (e) comprises evaporating the solvent.

150. (Allowed) Purified cage molecules consisting of carbon atoms prepared by the process comprising: (a) evaporating a carbon source in the presence of an inert quenching gas under conditions effective to produce a sooty carbon product containing cage molecules consisting of carbon atoms, said cage molecules being present in said sooty carbon product in sufficient concentration to allow a macroscopic amount of said cage molecules to be separated from said sooty product; (b) collecting the sooty carbon product produced therefrom; (c) subliming said cage molecules from the sooty carbon product; and (d) condensing said cage molecules.

151. (Allowed) The purified cage molecules consisting of carbon atoms of claim 150, wherein said collecting in step (b) is done on a glass surface.

152. (Canceled)

153. (Allowed) The purified cage molecules consisting of carbon atoms of claim 150 wherein step (c) comprises heating said sooty carbon product comprising said cage molecules in a vacuum or inert atmosphere at effective sublimation temperatures to extract said cage molecules from said sooty carbon product.

154. (Allowed) The purified cage molecules consisting of carbon atoms of claim 150 in which

the carbon source in step (a) is vaporized in an evacuated reactor.

155. (Allowed) The purified cage molecules consisting of carbon atoms of claim 154 in which the carbon in step (a) is vaporized in an evacuated bell jar.

156. (Allowed) The purified cage molecules consisting of carbon atoms of claim 150 in which the carbon subject to vaporization in step (a) is graphite.

157. (Allowed) The purified cage molecules consisting of carbon atoms of claim 150 in which the carbon subject to vaporization in step (a) is graphite rods.

158. (Allowed) The purified cage molecules consisting of carbon atoms of claim 150, wherein the carbon source in step (a) is vaporized by passing an electric current of sufficient intensity to produce a sooty carbon product.

159. (Allowed) The purified cage molecules consisting of carbon atoms of claim 158, wherein the electrical current is about 100 amps.

160. (Allowed) The purified cage molecules consisting of carbon atoms of claim 150, wherein the inert quenching gas of step (a) is a noble gas.

161. (Allowed) The purified cage molecules consisting of carbon atoms of claim 150, wherein the carbon source in step (a) is vaporized at a pressure ranging from 50 torr to 400 torr.

162. (Allowed) The purified cage molecules consisting of carbon atoms of claim 161, wherein the carbon source is vaporized in step (a) at approximately 100 torr.

163. (Allowed) The purified cage molecules consisting of carbon atoms of claim 160, wherein the noble gas is helium or argon.

164. (Allowed) An industrial paint pigment comprising C₆₀ and/or C₇₀.

165. (Allowed) A lubricant comprising C₆₀ and/or C₇₀.